CLAIMS

What is claimed is:

1. A method of maintaining a controlled level of oxygen within a closed food package, said method comprising:

forming at least one package element from a laminate of polymeric films, said laminate having selected oxygen permeability characteristics to maintain oxygen in said package at a level between the oxygen level which will prevent anaerobic microorganisms from developing and an oxygen level sufficient to permit aerobic bacteria to develop and thus indicate spoilage;

disposing a food product within said package; and

closing the package to the outside atmosphere.

2. The method of claim 1 further comprising:

selecting said laminate polymeric films and providing the required surface area of the container to maintain a constant partial pressure of oxygen within said closed package at not less than about 1% O_2 and not more than about 2% O_2 and selecting said laminated polymer films designed to maintain desirable partial pressure of oxygen within said hermetically sealed container.

3. The method of claim 1 further wherein:

said closed package has a defined head space; and

the volume of said head space is selected in combination with said permeability characteristics of said laminate to maintain at a stable selected level said partial pressure of oxygen within said package.

4. The method of claim 1 further comprising:

providing within said container micropores of selected diameter sufficient to permit passage of oxygen therethrough and into said container; and

disposing a polymeric label material over said container micropores said polymeric label material having smaller label micropores therein to control diffusion of oxygen therethrough and to maintain partial oxygen pressure within said closed package at a selected level.

5. The method of claim 4 wherein said label material comprises expanded polypropylene.

6. The method of claim 4 wherein said label material comprises expanded polyethylene.

7. The method of claim 1 further comprising:

providing package surface area increasing means upon said food package elements for increasing the absolute value of oxygen permeability of the closed package.

8. The method of claim 7 wherein said package surface area increasing means comprises ribs disposed upon said package.

9. The method of claim 7 further comprising adjusting the size of said package surface area increasing means to control the effective amount of surface area of said package available for oxygen transmission.

10. The method of claim 7 further comprising lid

providing a food package having container and package elements; and

providing said package surface area means upon said container element of said food package.

11. The method of claim 7 further comprising

providing a food package having container and package elements; and

providing said package surface area means upon said package lid element of said food package.

12. The method of selecting said laminate polymeric films and surfaces to provide O_2 partial pressure to control metabolic for fruits and vegetables.

13. The method of selecting said laminate polymeric films to provide constant O_2 partial pressure measurable in parts per million.

14. The method of claim 7 further comprising:

selecting said laminate polymeric films to maintain a constant partial pressure of oxygen within said closed package at not less than about 1% O_2 and not more than about 2% O_2.

15. The method of claim 7 further wherein:

said closed package has a defined head space; and

the volume of said head space is selected in combination with said permeability characteristics of said laminate to maintain at a stable selected level said partial pressure of oxygen within said package.

16. The method of claim 7 further comprising:

providing within said container micropores of selected diameter sufficient to permit passage of oxygen therethrough and into said container; and

disposing a polymeric label material over said container micropores said polymeric label material having smaller label micropores therein to control diffusion of oxygen therethrough and to maintain partial oxygen pressure within said closed package at a selected level.

17. The method of claim 7 wherein said label material comprises expanded polypropylene.

18. The method of claim 7 wherein said label material comprises expanded polyethylene.

19. The method of claim 4 wherein said container micropores are approximately 25 microns in diameter.

20. The method of claim 4 wherein said smaller label micropores are approximately 5 microns in diameter.

21. The method of claim 1 wherein at least one package element is formed from styrene-butadiene copolymer.

22. The method of claim 1 wherein at least one package element has a gaseous diffusion rate of 400-600 cc O_2 / 24 hours / 100 in^2 / mil at ATM.

23. The method of claim 8 wherein said ribs stiffen said package element.

24. The method of claim 23 further comprising decreasing the thickness of said package element to control the gaseous permeability characteristics thereof.

25. The method of claim 1 wherein said closed food package comprises container and package lid elements with package closure means disposed therebetween.

26. The method of claim 25 wherein said package closure element comprises a sealable strip.

27. The method of claim 25 wherein said package closure further comprises a flange supporting said sealable strip.

28. The method of claim 25 wherein said package closure means comprises mating male and female members.

29. The method of claim 25 wherein said package lid element comprises a dome.

30. The method of claim 25 wherein said package lid element comprises a dome hermetically sealed with the cup.

31. The method of claim 25 wherein said container element includes an opening thereinto and a closure membrane is sealed thereupon.

32. The method of hermetically sealed cup and dome with headspace filled with CO_2 and N_2 mixture, or N_2 and O_2 mixture, or Ar-CO_2-O_2 mixture.

33. The method of claim 31 further comprising controlling the gaseous diffusion rate of said closure membrane.

34. The method of claim 1 wherein at least one of said package elements has a gaseous diffusion rate of approximately 0.1 cc O_2 / 24 hours / 100 ins^2 / ATM @ 75°F and relative humidity of 65%